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C-2805/5(PHA 4166.5)
PATENT

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent of Alan E. Moorman et al.

Patent No. 6,906,078 *B2*

Issued June 14, 2005

Confirmation No. 3271

For METHOD OF USING (H^+/K^+) ATPASE INHIBITORS AS ANTIVIRAL AGENTS

October 31, 2005

REQUEST FOR EXPEDITED ISSUANCE
OF CERTIFICATE OF CORRECTION UNDER 37 CFR 1.322

Certificate
NOV 08 2005
of Correction

TO THE COMMISSIONER FOR PATENTS,

SIR:

On studying the above-identified patent, the following errors, apparently made in part by applicant and in part by the Patent and Trademark Office, were found (these errors are also noted on the attached form PTO-1050):

** On the Face of the Patent (63) Related U.S. Application Data, that portion reading "April 24, 1994, now abandoned" should read -- April 29, 1994, now abandoned --.

** In column 1, lines 11 and 12, "Apr. 24, 1994" should read -- Apr. 29, 1994 --.

In column 70, claim 9, line 63, "claim 8" should read -- claim 5 --.

(See Response After Advisory Action dated July 23, 2004; claim 39 (new claim 9) depended from claim 35 (new claim 5).

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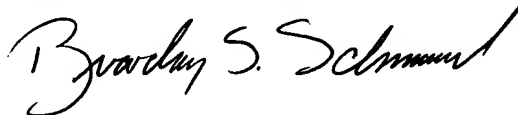
REMARKS

In accordance with 37 CFR 1.322, a copy of the Response After Advisory Action, dated July 23, 2004, and a copy of the Notice of Allowance dated August 9, 2004, are attached.

Since the error shown above marked with double asterisks was made by applicant, the \$100.00 fee required under Rule 1.323 is enclosed.


We respectfully request that a certificate of correction be issued.

Respectfully submitted,


Bradley S. Schammel, Reg. No. 54,667
SENNIGER POWERS
One Metropolitan Square, 16th Floor
St. Louis, Missouri 63102
(314) 231-5400

CERTIFICATE OF MAILING

I hereby certify that the foregoing Letter to the Patent and Trademark Office in the patent of Alan E. Moorman et al., Patent No. 6,906,078, issued June 14, 2005 is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop Post Issue, Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450 on this ~~31st~~ day of October, 2005.


Darlene Pearman

BSS/dep
*Enclosure

NOV 09 2005



EV416450723US

PHA 4166.5 (2805/5)
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of Alan E. Moorman et al.

Art Unit 1621

Serial No. 09/885,221

Filed June 20, 2001

Confirmation No. 3271

For METHOD OF USING (H+/K+) ATPase INHIBITORS AS ANTIVIRAL AGENTS

Examiner Kumar

July 23, 2004

RESPONSE AFTER ADVISORY ACTION

TO THE COMMISSIONER FOR PATENTS,
P.O. Box 1450
Alexandria, Virginia 22313-1450

SIR:

In response to the Advisory action dated June 9, 2004, please enter the following amendments and consider the following remarks:

Amendments to the claims begin on page 2 of this paper.

Remarks begin on page 4 of this paper.

Conclusion begins on page 5 of this paper.

AMENDMENTS TO THE CLAIMS

Claim 1 (canceled)

Claim 2 (Currently amended) The method of claim [[1]] 33 wherein the benzimidazole compound contains a sulfur radical selected from the group consisting of sulfoxide, alkylthio, and sulfone.

Claims 3-21 (Canceled)

Claim 22 (Currently amended) The method of claim [[2]] 33 wherein the benzimidazole compound contains a divalent sulfur bridge.

Claim 23-31 (Canceled)

Claim 32 (Currently amended) The method of claim [[31]] 38 wherein the serine herpetoviridae protease is assembled.

Claim 33 (Previously presented) A method of treating a herpetoviridae infection in a subject in need of such treatment, said method comprising treating the subject with a therapeutically effective amount of a sulfur-containing benzimidazole compound, wherein the compound is an inhibitor of a (H⁺/K⁺) ATPase and an inhibitor of a herpetoviridae protease.

Claim 34 (Currently amended) The method of claim [[1]] 2 wherein the benzimidazole compound contains a sulfone radical.

Claim 35 (Currently amended) The method of claim [[1]] 2 wherein the benzimidazole compound contains a sulfoxide radical.

⑥ Claim 36 (Previously presented) The method of claim 34 wherein the herpetoviridae is selected from the group of viruses consisting of herpes simplex viruses, cytomegalovirus, herpes varicellazoster, Epstein-Barr, HHV6, HHV7, pseudorabies, and rhinotracheitis.

⑦ Claim 37 (Previously presented) The method of claim 35 wherein the herpetoviridae is selected from the group of viruses consisting of herpes simplex viruses, cytomegalovirus, herpes varicellazoster, Epstein-Barr, HHV6, HHV7, pseudorabies, and rhinotracheitis.

⑧ Claim 38 (Previously presented) The method of claim 34 wherein the herpetoviridae protease is a serine herpetoviridae protease.

⑨ Claim 39 (Previously presented) The method of claim 35 wherein the herpetoviridae protease is a serine herpetoviridae protease.

REMARKS

Claims 33 and 36-39 are allowed.

On June 9, 2004, Applicants' representative Aleksandra Suri and Examiner Shailendra Kumar had a scheduled telephone interview to discuss the patentability of claims 2, 22, 34, and 35. Applicants requested allowance of the above-referenced claims upon modifying their dependency to depend from claim 33. The Examiner stated that claims modified in such manner would be allowable as long as the term "the compound" in claims 2, 22, 34, and 35 was modified to "the benzimidazole compound." The Examiner also requested that the Applicant's representative prepare an interview summary and submit the amended claims for final review. In preparing this response, Applicants note that claim 32 was not discussed; however, Applicants believe that this claim is allowable upon modifying its dependency in accordance with the above-mentioned claims. Accordingly, Applicants respectfully request allowance of claims 2, 22, 32, 34, and 35.

CONCLUSION

In light of the foregoing, Applicants respectfully request entry of the claim amendments, and solicit an allowance of the pending claims. The Examiner is invited to contact the undersigned attorney should any issues remain unresolved.

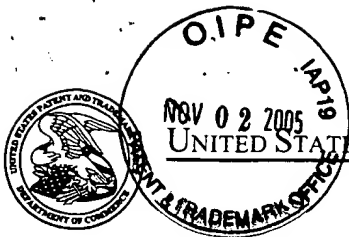
The time for response was previously extended to May 28, 2004 by payment of a one month extension fee and now further extended to and including July 28, 2004 by the enclosed check in the amount of \$840.00 in payment of the additional two month extension fee required under 37 C.F.R. §1.136(a). The Commissioner is hereby authorized to charge any underpayment and credit any overpayment of government fees to Deposit Account No. 19-1345.

Respectfully submitted,



Kathleen M. Petrillo, Reg No. 35,076
SENNIGER, POWERS, LEAVITT & ROEDEL
One Metropolitan Square, 16th Floor
St. Louis, Missouri 63102
(314) 231-5400

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AUG 12 2004

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
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www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

000321

7590

08/09/2004

ESH/Kmp/AXS

SENNIGER POWERS LEAVITT AND ROEDEL
ONE METROPOLITAN SQUARE
16TH FLOOR
ST LOUIS, MO 63102

EXAMINER

KUMAR, SHAILENDRA

ART UNIT

PAPER NUMBER

✓ 1621

DATE MAILED: 08/09/2004

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
✓ 09/885,221	✓ 06/20/2001	✓ Alan E. Moorman	✓ C-2805/5 (PHA 4166.5)	✓ 3271

✓ TITLE OF INVENTION: METHOD OF USING (H+/K+) ATPASE INHIBITORS AS ANTIVIRAL AGENTS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	✓ NO	\$1330	\$300	\$1630	11/09/2004

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS** FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

If the SMALL ENTITY is shown as NO:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

A. Pay TOTAL FEE(S) DUE shown above, or

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.



AUG 12 2004

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/885,221 ✓	06/20/2001 ✓	Alan E. Moorman ✓	C-2805/5 (PHA 4166.5) ✓	3271 ✓
000321	7590	08/09/2004 <i>ESH/KMP/AXS</i>		
SENNIGER POWERS LEAVITT AND ROEDEL ONE METROPOLITAN SQUARE 16TH FLOOR ST LOUIS, MO 63102				
			EXAMINER KUMAR, SHAILENDRA	
			ART UNIT 1621 /	PAPER NUMBER

DATE MAILED: 08/09/2004

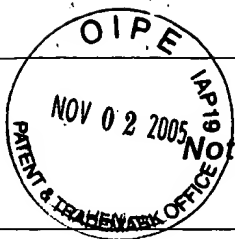
Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 20 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 20 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (703) 305-1383. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (703) 305-8283.



Notice of Allowability

Application No.

09/885,221

Applicant(s)

MOORMAN ET AL.

Examiner

SHAIENDRA - KUMAR

Art Unit

1621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 7/23/04.
2. ☒ The allowed claim(s) is/are 33,2,22,34-39 and 32(renumbered as 1-10).
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

SHAIENDRA - KUMAR
Primary Examiner
Art Unit: 1621

Art Unit: 1621

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.
2. In the preliminary amendment A of 9/3/02, line 2, after "2000," line 4, after "1999," line 5, after "1996," -- now abandoned, -- is inserted; line 6, after "1994," --, now abandoned -- is inserted.
3. The following is an examiner's statement of reasons for allowance: The closest prior arts are Lindberg et al and EP 0 407 217. Lindberg is teaching structurally similar benzimidazoles having inhibiting property of H⁺/K⁺ ATPase, but does not teach the compounds to be inhibitor of herpetoviridae protease and thus does not teach the treatment of herpetoviridae infection. EP'217 teaches structurally similar compounds to be in the treatment of herpesvirus, but does not define the two functionality as claimed herein. Table 2 in the present specification details results comparing the ability of the various imidazoles. One of the compounds is omeprazole, also disclosed by Lindberg et al. This compound is found to have 0% assembling inhibition and thus does not fall in the claimed category of compounds having dual functionality. Thus all the benzimidazoles compounds having sulfur-containing group cannot be characterized to be having dual functionality as claimed herein. Some of the compounds having dual property of inhibiting H⁺/K⁺ ATPase and inhibiting herpetoviridae protease is described in the specification on page 39, wherein there is amino group substituted on the pyridine or phenyl ring. No such amino substituted ring is

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suggested in Lindberg et al, or no such benzimidazoles are taught in the EP'217 reference, and hence there is no motivation to one of ordinary skill in the art to arrive at the claimed method using the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHAILENDRA - KUMAR whose telephone number is (571)272-0640. The examiner can normally be reached on Mon-Thur 8:00-5:30, Alt Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on (571)272-0646. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application/Control Number: 09/885,221

Art Unit: 1621

Page 4



SHAIENDRA - KUMAR
Primary Examiner
Art Unit 1621

S.Kumar
8/6/04

UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

PATENT NO. : 6,906,078 *B2*

DATED : June 14, 2005

INVENTOR(S): Alan E. Moorman, Daniel P. Becker, Daniel L. Flynn

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On the Face of the Patent

(63) Related U.S. Application Data, that portion reading "April 24, 1994, now abandoned" should read -- April 29, 1994, now abandoned --.

Column 1

Lines 11-12, "Apr. 24, 1994" should read -- Apr. 29, 1994 --.

Column 70

Line 63, "claim 8" should read -- claim 5 --.

MAILING ADDRESS OF SENDER:

Edward J. Hejlek
Senniger, Powers
One Metropolitan Square, 16th Floor
St. Louis, MO 63102

PATENT NO. 6,906,078

No. of additional copies



This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 09 2005